Amendments to the Drawings:

The attached sheet of drawings includes changes to Figure 5. In particular, the switch 12 is labeled a single pole double throw switch as suggested by the Official Action. This sheet, which includes Figures 3-5, replaces original sheet 2/3 which includes the same figures.

Attachment: replacement sheet 2/3

REMARKS

The Official Action objects to the drawing and suggests that the box representative of switch 12 in Figure 5 should be labeled "single pole double throw switch". A replacement sheet is submitted herewith which revises Figure 5 to label switch 12 as suggested by the Official Action. As such, Applicants submit that the objection to the drawings is therefore overcome. The Official Action also rejects Claims 1-6, 8 and 9 as being anticipated by U.S. Patent No. 5,388,467 to John Jereb et al. In addition, the Official Action rejects Claims 1, 5, 7, 10, 11 and 14 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,117,189 to Michael A. Terminiello et al. Finally, the Official Action rejects Claims 12, 13 and 15-27 under 35 U.S.C. § 102(a) as being unpatenable over the Terminiello '189 patent in view of the Jereb '467 patent.

Claims 1-9 and 22 have now been canceled. Of the remaining independent claims, i.e., independent Claims 10 and 18, Claim 10 has been amended to further patentably distinguish the claimed invention from the cited references, taken either individually or in combination, while the rejection of Claim 18 has been traversed. Dependent Claims 24 and 26 have been amended to address an issue relating to antecedent basis. Additionally, new dependent Claims 28-31 have been added to define still other unique aspects of the claimed invention. Further, a new set of claims has been added including independent Claim 32 and dependent Claims 33-37. As point of reference, new independent Claim 32 is substantively identical to original dependent Claim 8, albeit rewritten in independent form. Based on the foregoing amendments and the following remarks, Applicants respectfully request reconsideration of the present application and allowance of the amended set of claims.

Independent Claim 10

Independent Claim 10 is directed to an apparatus for testing a switch which includes a stage upon which the switch is mounted, a micrometer assembly for controllably actuating the switch and a measurement device for monitoring the electrical condition of the switch as the state of the switches is altered. The micrometer assembly includes an actuator shaft for actuating the switch to thereby alter the state of the switch and a micrometer for controllably positioning the actuation shaft relative to the switch such that the actuation shaft actuates the switch. As now

amended, independent Claim 10 recites that the micrometer is capable of manual actuation. In support of this additional recitation, Applicants refer to original Figures 1 and 3 which depict a micrometer that is capable of manual actuation. As would be well understood by those skilled in the art, a micrometer of the type depicted in Figures 1 and 3 is manually actuable by rotating the member that includes the numeric scale 0-62 in the illustrated embodiment. By being capable of manual actuation, the micrometer permits an operator to more easily investigate an area of interest. For example, in testing a switch, an operator may determine that the switch behaves in an unusual manner in and around the time at which the normally closed contact is broken. By permitting manual actuation of the micrometer, the operator can repeatedly and controllably move the actuator shaft for and aft relative to the switch in order to further investigate the behavior of the switch as the normally closed contact is broken.

The Terminiello '189 patent includes a micrometer for positioning a micrometer rod which, in turn, actuates the switch. In contrast to the apparatus of amended independent Claim 10 in which the micrometer is capable of manual actuation, the micrometer of the Terminiello '189 patent operates in an automated fashion in which a computer directs a stepper motor to move in a desired manner and the stepper motor, in turn, drives the micrometer. See, for example, column 5, lines 25-27 of the Terminiello '189 patent which states that "the computer provides commands for movement to the stepper motor 10, which drives the micrometer". See also Figure 1 of the Terminiello '189 patent. By relying upon pre-programmed computer control, the micrometer of the Terminiello '189 patent not only is substantially different than the micrometer that is capable of manual actuation of amended independent Claim 10, but also cannot readily provide the operator with the ability to further investigate an area of interest as is provided by the manual actuation of the micrometer of the claimed invention. The automated nature of the Terminiello switch analyzer may be well suited for an industrial setting in which repetitive and predefined checks are performed, such as during a quality control acceptance procedure in a switch production facility. However, such predefined automated procedures are not as well suited for critically evaluating switch performance of individual switches that may have failed, such as would be conducted during an accident investigation.

The Jereb '467 patent also describes an automated switch actuation mechanism which again includes a stepper motor for controllably advancing a lead screw and a corresponding ball slide unit. As such, the Jereb '467 patent fails to teach or suggest an apparatus for testing a switch having a micrometer assembly and, more particularly, having a micrometer that is capable of manual actuation, as recited by amended independent Claim 10.

Thus, neither of the references teach or suggest a micrometer capable of manual actuation as recited by the apparatus for testing a switch of amended independent Claim 10. Thus, even if the references were combined, the combination of the references would still fail to teach or suggest an apparatus including a micrometer assembly with a micrometer capable of manual actuation as recited by amended independent Claim 10.

Independent Claim 18

Independent Claim 18 also recites an apparatus for testing a switch and includes a mounting assembly for mounting a switch, an actuator for actuating a switch to thereby alter the state of the switch and a positioning device for controllably positioning at least one of the actuator and a stage such that the actuator actuates the switch. Independent Claim 18 further defines a mounting assembly to include a base, an upstanding member mounted upon a base and adapted for movement in the first direction relative to the base and a stage upon which a switch is mounted. The stage is mounted to the upstanding member and is adapted for movement in a second direction relative to the upstanding member. By permitting movement of the upstanding member and a stage in first and second directions relative to the base, the stage and, in turn, the switch mounted upon the stage can be controllably positioned. This controlled positioning is advantageous not only to ensure proper alignment of a switch with the actuator, but also to permit the apparatus to test a variety of different switches that have different sizes and/shapes and therefore must be positioned somewhat differently from the actuator to ensure proper actuation and testing.

With reference to Figure 1 of the present application, the upstanding member of the mounting assembly of independent Claim 18 may be adapted to move in a direction into and out

of the page. See also Figure 3. Additionally, the stage may be mounted to the upstanding member so as to be adapted for movement upwardly and downwardly. See also Figure 2. Thus, the stage and, in turn, the switch carried by the stage can be precisely positioned and re-positioned relative to the actuator.

The Terminiello '189 patent does not describe with any specificity the manner in which the switch is positioned relative to the actuator and, in particular, does not teach or suggest a mounting assembly having a base, and upstanding member that can move in a first direction relative to the base and a stage upon which the switch is mounted that is mounted to the upstanding member and adapted to move in a second direction relative to the upstanding member as recited by independent Claim 18. The Jereb '467 patent does include a platform upon which the switch is placed but does not describe that the platform may be repositioned in any direction, let alone first and second direction as recited by independent Claim 18. Moreover, in applying the Jereb '467 patent to independent Claim 18, the Official Action indicates that the upstanding member is comprised of ball bushings 20 and "the element between 50 and 48". With respect to the ball bushings 20, the ball bushings 20 obviously do not constitute an upstanding member. Moreover, the element between 50 and 48 does not support the stage upon which the switch is mounted as is required of the upstanding member in independent Claim 18. Instead, the element between 50 and 48 may support, to some degree, the actuator.

In applying the Jereb '467 patent to independent Claim 18, the Official Action further indicates that the upstanding member is adapted for movement in the first direction relative to the base as a result of the "movement of bringing the actuator to actuate the switch". As described by the Jereb '467 patent, this movement is a movement of the actuator itself with the switch remaining stationary. In contrast, the mounting assembly of independent Claim 18 permits movement of the upstanding member in a first direction and stage in a second direction such that the switch carried by the stage is, in turn, capable of movement in the first and second directions. Thus, the movement of the actuator described by the Jereb '467 patent does not constitute any type of movement of an upstanding member in the first direction relative to the base as recited by independent Claim 18.

The Official Action fails to point to any disclosure in the cited references for the mounting of the stage to the upstanding member so as to be adapted for movement in a second direction relative to the upstanding member as recited by independent Claim 18. Applicants submit that neither reference provides such a disclosure, thereby further distinguishing the apparatus of independent Claim 18 from the cited references.

As described above, neither cited reference teaches or suggests a mounting assembly having an upstanding member adapted for movement in a first direction relative to the base and a stage for carrying the switch that is mounted to the upstanding member and adapted for movement in a second direction relative to the upstanding member as recited by independent Claim 18. Thus, even if the cited references were combined, the combination of references would still fail to teach or suggest the mounting assembly of independent Claim 18.

Independent Claim 32

New independent Claim 32 describes an apparatus for testing a switch including a stage upon which the switch is mounted, an actuator for actuating the switch to thereby alter the state of the switch, a positioning device for controllably positioning at least one of the actuator and the stage relative to the other such that the actuator actuates the switch and a measurement device for monitoring travel of at least one of the actuator and the stage and for also monitoring the electrical condition of the switch as the state of the switch is altered. Independent Claim 32 further defines the actuator to include a magnetic field generator for actuating the switch. Thus, the apparatus of independent Claim 32 is capable of testing switches that are magnetically actuated, such as inductive switches and Hall effect switches.

Neither reference teaches or suggests an actuator that includes a magnetic field generator. Instead, both references rely upon actuators that physically contact the switch. The Official Action indicates that the Jereb '467 patent discloses a magnetic field generator for actuating the switch in column 4, lines 17-28. Applicants submit, however, that neither the referenced passage of the Jereb '467 patent nor any other portion of the Jereb '467 patent teaches or suggests an actuator that includes a magnetic field generator for actuating the switch as recited by new

independent Claim 32. With respect to the referenced passage (column 4, lines 17-28) in particular, the passage indicates that the switch is actuated with a force. However, nowhere is the force described to be magnetically generated and, instead, the Jereb '467 patent consistently and repeatedly describes the application of a physical force to actuate the switch. Thus, Applicants submit that neither cited reference, taken either individually or in combination, teaches the apparatus for testing a switch as recited by new independent Claim 32.

Dependent Claims

The dependent claims include each of the recitations of a respective independent claim and are therefore patentably distinct from the cited references, taken either individually or in combination, for at least the same reasons as described above in conjunction with the respective independent claims. However, a number of the dependent claims include additional recitations that further patentably distinguish the claimed invention from the cited references. For example, dependent Claims 21 and 37 further define the micrometer to be capable of manual actuation and are therefore further patentably distinct from the cited references for the same reasons as described above in conjunction with amended Claim 10. Likewise, dependent Claims 15 and 38 recite an outstanding member adapted to move in a first direction relative to the base and a stage mounted to the upstanding member and adapted to move in a second direction relative to the upstanding member so as to be further patentably distinct from the cited references for the same reasons as described above in conjunction with independent Claim 18. Dependent Claims 29 and 31 further define the actuator to comprise a magnetic field generator for actuating the switch and are therefore further patentably distinct from the cited references for the reasons described above in conjunction with new independent Claim 32.

Furthermore, dependent Claims 28, 30 and 33 introduce a connector that is either a bolt or a screw and that extends through an opening defined by the switch and engages the stage for mounting the switch thereupon. As described by the specification, the switch of one embodiment defines one or more openings that are used to mount the switch during a typical installation procedure. The same openings may be utilized to receive a bolt or a screw for

securing the switch to the stage. In contrast, the cited references utilize clamps of various types for holding the switch in position. Such clamps may place undesirable forces upon the switch. Depending upon the stiffness of the switch body, these forces may deform the switch to a sufficient degree to cause undesirable changes in the actuator characteristics. By utilizing a connector, such as bolt or screw, extending through openings defined by the switch, the apparatus set forth by dependent Claims 28, 30 and 33 can securely retain the switch upon the stage without placing undesirable forces thereupon. Thus, dependent Claims 28, 30 and 33 are further patentably distinct from the cited references for this additional reason.

For each of the foregoing reasons, independent Claims 10, 18 and 32, as well as the claims that depend therefrom, are not taught or suggested by the cited references, taken either individually or in combination. Applicants therefore submit that the rejections of the claims are overcome.

CONCLUSION

In view of the amendments and the remarks presented above, it is respectfully submitted that all of the claims of the present application are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicants' undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on December 27, 2004

Gwen Frickhoeffer